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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/734,636

12/15/2003

Seong-Jin Jang

SEC.1095

2001

20987

7590

06/26/2006

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EXAMINER

SHIN, CHRISTOPHER B

ART UNIT

PAPER NUMBER

2181

DATE MAILED: 06/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/734,636	Applicant(s) JANG, SEONG-JIN	
	Examiner Christopher B. Shin	Art Unit 2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 31-35 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-15, 17-25, 27-30, 36-38, 40-42 and 44-46 is/are rejected.
- 7) ☒ Claim(s) 6, 16, 26, 39, 43 and 47 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12152003 (1sheet)</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 7-15, 17-25, 27-30, 36-38, 40-42 and 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parks et al. (5,432,735).

a. In figures 2-4 and the respective descriptive sections, the Parks reference teaches the all of the basic limitations as follows:

Claims 1-5, 7-10 Parks et al. (5,432,735)

- An integrated circuit, comprising:
 - Circuit of figure 2
- M first terminals and N second terminals, where M & N are positive integers, and where $M > N > 1$
 - Figure 2, (B10-BI3 & T00-T21)
- a converter which receives M base-A-level input signals from the M first terminals, respectively
 - (220)
- which encodes each of A^m values represented by M base-A-level input signals as a different base-K value represented N base-K-level
 - (220) & (BI3-BI0))
- output signals to the N second terminals, respectively, where A and K are positive integers, and where $K > A > 1$
 - (220) & (T00-T21)

b. As per claims 1 & 7-8, as can be seen from the above teachings details, the main difference between the claim 1 and the Parks reference is that the

Parks reference does not expressly teaches the figure 2 logic diagram to be IC; however, such difference is nothing more than inherent feature or clearly obvious to one having ordinary skilled in the art. This is because, one skilled in the art knows that utilizing or incorporating IC structure from the logical system/structure (e.g., figure 2 diagram) is one of the most common way/knowledge in the art to developing a system for the well known benefit and motivation of accomplishing efficient size/cost. Therefore, it would have been obvious at the time the invention was made to one having ordinary skill in the art to add/utilize common knowledge (i.e., IC technique) to Parks system to come up with the claimed invention for the reasons stated above.

c. As for claims 2-5 & 9-10, further add limitations regarding a specific/further application (i.e., connections to a memory); however, such application is common practice in the art of IC interconnection art. This is because, the claimed encoder/decoder IC are very well known in the art where higher bandwidth/efficient capacity is desired. For example, a binary-ternary encoder/decoders are commonly utilized along with a memory system to increase storage capacity/efficiency; utilized along with communication device to increase communication bandwidth. The examiner takes official notice on the well-known applicability of the encoder/decoder such as the claimed IC. Therefore, it would have been obvious at the time the invention was made to one having ordinary skill in the art to utilize the Parks encoder/decoder to a system where higher bandwidth or increase in storage capacity/efficiency is desired.

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d. As in claim 11, the following details are applied as follows:

Claims 11-15, 17-20 Parks et al. (5,432,735)

- An integrated circuit, comprising:
 - Circuit of figure 2
- N first terminals and M second terminals, where M and N are positive integers, and where $M > N > 1$
 - Figure 2, (S00-S21 & B01-BO3)
- a converter which receives N base-A-level input signals from the N first terminals, respectively
 - (270)
- which decodes each base-K value represented by the N base-K-level input signals into different one of A^m values of M base-A-level output signals to the M second terminals, respectively, where A and K are positive integers, and where $K > A > 1$
 - (270) & (S00-S21) into (BO1-BO3)

e. As in claims 11 & 17-18, due to the similarity between the claims 1 & 7-8 and 11, the detail discussions of the claims 1 & 7-8 are similarly applied, respectively.

f. As for claims 12-15 & 19-20, the detail discussions of claims 2-5 & 9-10 are similarly applied, respectively.

g. As in claim 21, the following details are applied as follows:

Claims 21-25, 27-30 Parks et al. (5,432,735)

- M first terminals and N second terminals, where M and N are positive integers, and where $M > N > 1$
 - Figure 2, (B10-BI3 & T00-T21)
- A first converter which receives M base-A-level output signals from the M first terminals, respectively
 - (220)
- Which encodes each of A^m values of the M base-A-level output signals into a different base-K value represented by N base-K-level output signals, and which outputs the N base-K-level output signals to the N second terminals, respectively, where A and K are positive integers, and where $K > A > 1$
 - (220), (B10-BI3 & T00-T21)

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- Second converters which receives N base-K-level input signals from the N first terminals, respectively,
 - (270)
 - Which decodes each base-K value represented by the N base-K-level input signals into a different one of A^m values of M base-A-level input signals, and which outputs the M base-A-level input signals to the M second terminals, respectively
 - (270) & (S00-S21) into (BO1-BO3)
- h. As in claims 21 & 27-28, due to the similarity between the claims 1 & 7-8 and 11, the detail discussions of the claims 1 & 7-8 are similarly applied, respectively.
- i. As for claims 22-25 & 29-30, the detail discussions of claims 2-5 & 9-10 are similarly applied, respectively.
- j. As for method version claims 36-38, 40-42 & 44-46, the respective apparatus version teachings details of claims 1-5, 11-15 & 21-25 are similarly applied, respectively.

Allowable Subject Matter

1. Claims 31-35 are allowed.
2. 5Claims 6, 16, 26, 39, 43 & 47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher B. Shin whose telephone number is 571-272-4159. The examiner can normally be reached on 6:30-5:00 M,Tu,Th,F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Huynh can be reached on 571-272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CHRISTOHER SHIN
PRMARY EXAMINER
OF 2181

June 22, 2006
cbs

A handwritten signature in black ink, appearing to be 'CSH', written over the printed name of Christoher Shin.